Mapping Historic Floodplain Meadows along the Rivers Swale, Ure and Ouse

December 2023

Fjordr ref: 16651

v. 17/12/2023

Emma Firth and Antony Firth

Fjordr Ltd.

A report for

Floodplain Meadows Partnership

Title	**Mapping Historic Floodplain Meadows along the Rivers Swale, Ure and Ouse**
Fjordr Ref / Version	16651 v. 08/12/23
External Ref(s)	
Authors	Emma Firth and Antony Firth
Derivation	
Origination Date	11/07/23
Date of Last Revision	17/12/23
Summary of Changes	
Status / Required Action	Final
Circulation	
File Name / Location	FMP Ouse - Report - 171223.docx

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Acknowledgements

This report was commissioned by the Floodplain Meadows Partnership. We are grateful to Emma Rothero and David Gowing for their continuing advice and assistance.

We are especially grateful to Martin Hammond for making available his data on the Swale, Ure and Ouse and for sharing his expertise on these catchments so generously.

This report can be cited as follows:

> Firth, E. and Firth, A., December 2023, Mapping Historic Floodplain Meadows along the Rivers Swale, Ure and Ouse. Unpublished report by Fjordr Ltd. for the Floodplain Meadows Partnership.

Executive Summary

Fjordr Limited has been commissioned by the Floodplain Meadows Partnership, hosted by the Open University, to identify the historic extent of floodplain meadows on selected stretches of the River Swale, River Ure and River Ouse. The project focusses on 'ings': a regional term used in Yorkshire for a floodplain meadow used for producing hay with origins in the early medieval period. The aim of the project was to see if the methodology developed in earlier studies to identify floodplain meadows using historic maps and other landscape sources (the 'FPM methodology') could be used to locate ings and meadows recorded from documentary sources by Martin Hammond. The extents of these ings and meadows were mapped in a GIS layer which could then be added to the online Historic Sites Map, hosted by the Floodplain Meadows Partnership.

The study has shown that Hammond's documentary research can be combined with the FPM methodology to locate historic floodplain meadows with a clear degree of confidence. The documentary sources provide additional context and dating, enabling ings whose location and extent is derived from 19th century maps to be extended many centuries earlier, even to the 12th century in some cases.

The association of FPMs with these documentary sources reinforces the conclusion that features in the landscape mappable from 19th century sources and still extant in some cases are the relics of a land use system centred on floodplain meadows stretching back into the medieval period, even though their distinctive habitats have been erased. This lends confidence to opportunity mapping for restoration sites using historic map evidence indicating the likely former presence of floodplain meadows. Furthermore, the documented antiquity of identifiable floodplain meadows adds to the possibilities for engaging the public and volunteers in restoring this habitat to its former locations whilst learning about the history of meadows from maps and archival sources.

This investigation has also added a further regional case study to the developing understanding of the presence and survival of floodplain meadows across England. In this case – in contrast to studies in Dorset, Devon, Gloucestershire, and Oxfordshire – it seems that the form of many floodplain meadows had already been lost before the widespread availability of historic maps in the early 19th century. Yet the presence of at least some floodplain meadows here with all the characteristic features seen in other catchments suggest that floodplain meadows in these distinctive forms were once more widespread on the Ouse and its tributaries. This continues to suggest that floodplain meadows with consistent characteristics were widely distributed across England in the medieval period. The pattern of their survival by the nineteenth century seems to indicate regional differences in histories of enclosure and improvement rather than in the original presence and form of floodplain meadows.

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Fjordr 16651

Introduction

Fjordr Limited has been commissioned by the Floodplain Meadows Partnership, hosted by the Open University, to identify the historic extent of floodplain meadows on selected stretches of the River Swale, River Ure and River Ouse. The project focusses on 'ings': a regional term used in Yorkshire for a floodplain meadow used for producing hay with origins in the early medieval period. The aim of the project was to see if the methodology developed in earlier studies to identify floodplain meadows using historic maps and other landscape sources could be used to locate ings and meadows recorded from documentary sources by Martin Hammond (Hammond 2017; 2021). The extents of these ings and meadows were mapped in a GIS layer which could then be added to the online Historic Sites Map[1], hosted by the Floodplain Meadows Partnership.

Methodology

Overview

The methodology for mapping ings and floodplain meadows generally is based on the methodology developed by Fjordr Ltd. set out in Historic Extent of Floodplain Meadows: Dorset Stour and Thames Tributaries (Firth and Firth 2022). This methodology enables the (former) presence of floodplain meadows to be mapped as Floodplain Meadow polygons (FPMs). This project differed through the additional use of data derived from documentary sources supplied by Hammond. These documented ings comprised a list of meadows and their approximate locations situated in the catchments of the River Swale, River Ure and River Ouse. Hammond's data is based on references to common land found in historic documents such as audits and surveys of landed estates, monastic cartularies, Quarter Sessions and other legal records (e.g. Star Chamber proceedings), land transactions (deeds, indentures, charters, conveyances), manorial rolls, enclosure maps and local history studies, and historic maps. Many of these documents refer to ings but often their location and extents within a parish are not stated. The limited geospatial information for these documented ings constrains the use of these very old records, hence the potentially complementary role that the FPM methodology might play.

Study Area

The study area covered a selected area of the floodplain of the Rivers Swale, Ure and Ouse. Two tributaries were also partially explored, Cod Beck and Ings Goit. The parishes that fall within the study area are listed with their tithe map references and the date of the tithe apportionments in Appendix I.

The river stretches within the study area are as follows:

- River Swale: parishes Warlaby (on How Beck tributary) to Humberton and Myton on Swale to where the Swale and Ure meet.
- Rive Ure: from the parishes of West Tanfield and North Stainley with Sleningford to Boroughbridge and Ellenthorpe at the confluence of the Swale and Ure.

[1] https://floodplainmeadows.org.uk/discover/learn/history/historic-sites-map

- Rive Ouse: from where the River Ure joins the Ouse at Ouse Gill Beck to the parish of Nun Monkton.
- Cod Beck: from the parish of Topcliff to the parishes of Borrowby and Thornton-le-Beans.
- River Wiske: from the parishes of Kirby Wiske to the parishes of South Otterington.
- Ings Goit: from the parish of Well to where it joins the River Swale.

Figure 1 illustrates the extents of the study area with all the ings that were identified using the combination of the historic mapping and documentary records.

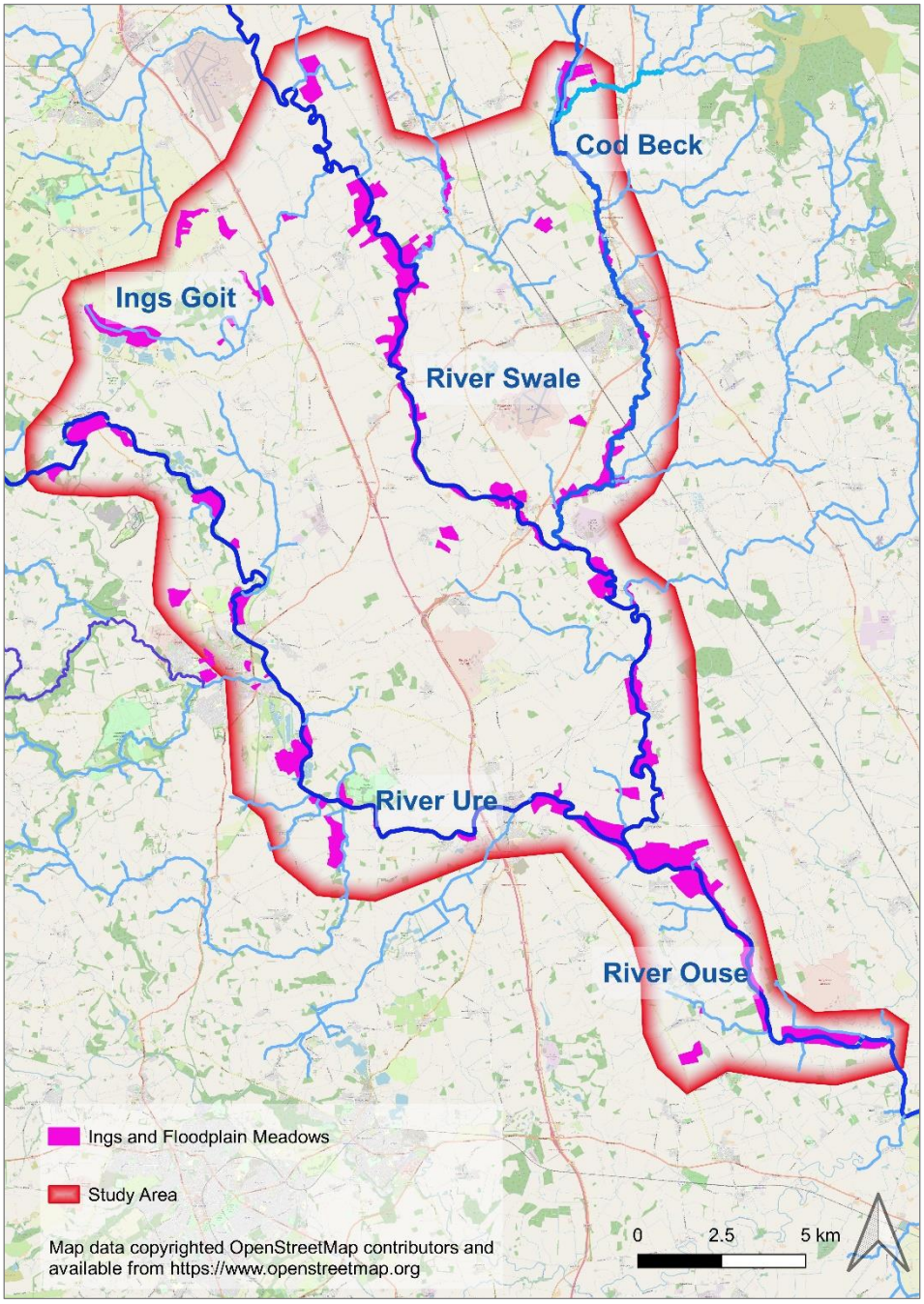

Figure 1 Study area showing the floodplain meadows mapped and recorded in this study.

Base Mapping

Rivers

Layers for main channels and tributaries were obtained from OS Open Rivers[2], which is available as open access data from the OS. The dataset is national, so the rivers in the study areas were selected and saved to new layers. The Open Rivers dataset comprises a centreline only for these watercourses.

In order to represent the watercourses not only as a centreline but also as having lateral extents, separate layers were sourced from OS Open Map – Local (Vector)[3] by selecting and combining the Surface Water Area shapefile for the 10-kilometre grid squares covering the study areas.

It is worth noting that the Surface Water Area shapefiles typically show smaller watercourses than the Open Rivers dataset including, for example, minor drains.

Risk of Flooding from Rivers and Sea

The extent of the modern floodplain was mapped using Environment Agency data for Risk of Flooding from Rivers and Sea, downloaded from the Defra Spatial Data Download Platform[4] as a shapefile. Within this layer are polygons representing high, medium, low, and very low risk of flooding.

It is certain that the modern floodplain will have changed since the medieval period due to subsequent alteration to rivers, construction of flood defences such as embankments, drainage of the surrounding land, the effect of the built environment, and climate variability. Nonetheless, the modern extent of the floodplain – indicated by the risk of flooding – currently appears to be the best, readily available guide to the extent of the floodplain in earlier periods.

Mentions in the text of 'the extent of the (modern) floodplain' refer to the area defined by the EA Risk of Flooding from Rivers and Sea.

Parish Boundaries

Parish boundaries were obtained from the OS Boundary-Line[5] product, which contains shapefiles for all administrative boundaries in Great Britain. The parish_boundary.shp was imported into the GIS project.

Parishes are generally very old administrative units often with recorded boundaries stretching back to the medieval period. Indeed, the current boundaries sometimes reflect physical boundaries that are no longer present, such as the former route of watercourses. Consequently, the modern parish boundaries mapped in GIS are likely to represent considerable continuity with much earlier features. Nonetheless, parish boundaries may change over time and the parishes along the Ure, Swale and Ouse were no exception to this.

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[2] https://www.ordnancesurvey.co.uk/business-and-government/products/os-open-rivers.html.

3 https://www.ordnancesurvey.co.uk/opendatadownload/products.html#OPMPLC.

4 https://environment.data.gov.uk/DefraDataDownload/?mapService=EA/RiskOfFloodingFromRiversAndSea&Mode=spatial.

5 https://www.ordnancesurvey.co.uk/opendatadownload/products.html#BDLINE.

Historic Sources

25" Ordnance Survey maps

The 25" OS County Series (1841-1952) is the most comprehensive mapping available for historic periods. These were made available in the project GIS via a WMS link to Edina Digimap provided by the Floodplain Meadows Partnership under the Open University's licence. Generally, Epoch 1 – the earliest editions typically dating to around 1880 – was used in the GIS.

Tithe Maps and Apportionments

Tithe maps and their accompanying apportionments provide information about the ownership, occupiers and topography of parishes in the early 19th century. The tithes generally predate Epoch 1 of the 25" OS maps by about 40 years. Their context and character, and potential for investigating floodplain meadows, are set out comprehensively by Pearson, Soar and Carter (Pearson and Soar 2018; Pearson, Soar, and Carter 2019).

Tithe maps and apportionments are available from Record Offices and online subscription providers. The tithe maps and their apportionment records for this project were accessed via a subscription at The Genealogist[6] website.

The tithe maps consulted are listed by parish in Appendix I with the dates of the accompanying apportionments.

Other sources

Reference was made to records of meadows in the Domesday Survey based on Open Domesday[7] derived from data collated in the Hull Domesday Project[8]; relevant information was recorded in the GIS.

Given the focus on already documented ings, archaeological records such as data from local authority HERs was not consulted for this project. Historic England Listing Data from the National Heritage List for England was included in the GIS project, however, and reference made to scheduled monuments where relevant. Equally, lidar data was not systematically collated and processed for this project, but some lidar layers were included in the GIS project to flag ridge and furrow indicating medieval agricultural activity.

Documented Ings

Hammond's documentary research into historic common land found on the Swale, Ure and Ouse river catchments has resulted in a dataset of 661 data points relating to two reports (Hammond 2017; 2021). From this dataset, 196 records were extracted for the Swale and Ure where the category is recorded as *meadow record* or *meadow place name* (Appendix II), and a further 48 from the Ouse (Appendix III) though only seven of these fell within the study area with the remainder downstream.

The documentary sources did not usually include plans or maps, so Hammond positioned them to the nearest location to the settlement or estate referred to in the documentary source, with National Grid References of varying precision (e.g. SE4265 equating to 1km precision; SE42617769 equating to 10m precision).

[6] https://www.thegenealogist.co.uk.
[7] https://opendomesday.org/.
[8] https://www.domesdaybook.net/.

Hammond's data was imported into the GIS project as a .csv data file and points were created using the grid references to provide a location of each meadows as far as could be determined from the documentary source.

This study sought to more accurately locate the ings identified from documentary sources and, where possible, to map their original extents. The process of mapping the ings drew on the diagnostic features of FPMs identified in earlier work (Firth and Firth 2022, 21).

The general approach was to identify FPMs using GIS to combine a variety of mapped sources using QGIS (v. 3.22.16-Białowieża LTR). Within the GIS environment – referred to as a project – mapping and data is introduced in layers in .shp/shapefile format or tif/raster format; and a shapefile (FPM Rivers Ouse Swale Ure.shp) was created to digitise the extent of FPMs and record their attributes. The following confidence levels were assigned to each FPM as it was identified:

1. Tentative mapping due to place name references but boundaries are not identifiable.
2. Meadow or ings reference in tithe map, relating to a single or multiple plots where the original boundaries are no longer visible.
3. Ings reference on either tithe or map, such as an area marked 'Ings'.
4. Ings reference with one or more diagnostic features such as lane, doles, funnel shaped entrance or boundary.
5. Ings ref, all diagnostic features (entrance, lane, doles, original or near original boundary, drainage) present on tithe or other source

It is worth noting that there may have been other floodplain meadows in the areas examined; the approach confines itself to mapping only those for which there is evidence to the varying degrees of confidence above. There are, in addition, places where it might seem likely that a floodplain meadow once existed: but in the absence of evidence, they are not mapped. It is acknowledged that the extent of floodplain meadows might have been greater than this study has indicated.

The resulting shapefile comprises a single layer of floodplain meadow polygons as spatial information with attributes (Table 1). The content of the layer is presented as a table in Appendix IV.

Fieldname	Description
ID_HistFPM	Identifying number for each FPM.
FPM_name	Defined by the area where the FPM is located, limited to 254 characters or specific name if one recorded on a source.
County	County FPM is within.
Parish	Parish FPM is within.
River	River FPM is located on.
ModLanduse	Modern land use as seen on the most recent satellite imagery.
FPMNotes	Description of the FMP – limited to 254 characters so necessarily concise.
Lammas	Reference to Lammas in sources. Yes/No field
Funnel	Does FPM have a characteristic funnel shaped entrance Yes/No field
Doles	Reference to doles, either in descriptions or visible on map sources such as tithe maps. Yes/no field
Drove	Drove or lanes which connects a settlement to a meadow, often via a funnel shaped entrance to the meadow. Yes/No field
Common	Reference to Common in sources. Yes/No field
Drainage	Reference to drainage in sources. Yes/No field

Placenames	Reference to specific placenames associated with floodplain meadows in sources. List of placenames such as ham, mead, common, lots, allotments, and doles.
Domesday	Whether there a domesday settlement with recorded acreage associated with the settlement in this parish. Obtained from Open Domesday[9]. Acreage recorded.
Tithe_Ref	Tithe map reference.
OS_Map_Ref	Historic OS Map reference.
OSSurvey_Ref	Historic OS Survey Drawing reference.
OtherMap	Any other historic map sources, such as estate maps, which reference the FPM.
Rep_link	Report or other reference material where the FPM is identified and if available, the link to the report or reference material.
Confidence	Confidence level in the identification of the FPM, with 1 being low and 5 being high. Confidence reflects the amount of information available about the FPM. A high confidence is assigned to an FPM when there are multiple sources and a high number of criteria about the meadow can be recorded. For example, a meadow that appears on several maps, has a funnel shaped entrance, doles mapped on the tithe map and named as a common in the tithe apportionment records. A low confidence meadow might be an FPM where only the boundaries within the floodplain indicate the presence of a meadow but there is no other evidence available.
Compliedby	Who created the record.
Compiledate	Date record created.

Table 1: Attributes of shapefile

The ings identified from mapped sources were cross referencing with Hammond's ings by adding a unique identifier to each record in Hammond's dataset, prefixed MH. These identifiers could then be referenced in the Reports section of the GIS table.

If it was certain that a meadow identified from the mapped sources was the same meadow as one identified by Hammond, this was recorded in the Notes section of the GIS table. If uncertain, only the reference was recorded in the Reports section of the GIS table and a note made to the effect that it was possibly the same meadow.

Where more than one ing appears in documentary sources in one location, all the ings were crossed referenced with the relevant ing identified in the GIS. It is probable that ings changed name through time, and that at the time of enclosure the name Ings was applied to at least one plot in an area of former floodplain meadow.

If the extents of an ing identified in Hammond's documentary research could be clearly identified from the OS 25" Epoch 1 map or the tithe map, these extents were digitised even if they fell outside the floodplain.

The relationship between ings identified by Hammond and ings mapped and recorded by this project is summarised in Appendix V.

Results

A total of 106 ings and meadows were identified within the study area. The number of ings or meadows and their total area is summarised by watercourse in Table 2.

[9] https://opendomesday.org/

Watercourse name	Count of Ings recorded	Area (ha)
Broad Beck	1	3
Cod Beck	18	151
Cod Beck/Thacka Beck	1	15
Hallam Beck	1	11
Healham Beck	2	20
Holbeck	1	54
How Beck	1	25
Ings Goit	2	93
Laver	1	12
Little Ouseburn	1	1
Ouse	4	106
Skell	1	2
Skittergate Gutter	1	4
Swale	32	687
Swale and Ure	1	47
Thacker Beck	1	10
Ure	23	541
Ure and Demains Beck	1	12
Willow Beck	1	5
Wisk	3	66
Not adjacent to a watercourse	5	68
Unnamed watercourse	4	53
Total	**106**	**1986**

Table 2 Count of ings or meadows by watercourse and their area (ha)

Only a small section of the Ouse was explored, hence the low number of ings mapped for this project. However, it was clear from the OS 25" Epoch 1 map that there was potential to map more ings along the course of the Ouse further downstream, beyond the study area.

The floodplain of the Ure quite is naturally constricted in places with the result that the ings were narrow, though in some parishes on the Ure, there was no reference to any ings in the tithe at all. This contrasts to the Swale and Ouse, where the floodplain is more extensive and the meadows resemble those found in other floodplain meadow studies on the Dorset Stour, Severn and Avon.

Other than having a constrained floodplain, the relative absence of ings on the Ure is difficult to explain. It is possible that the parishes along the Ure shared ings with other parishes, as was observed at Achim Mead on the River Thames, where Standlake Commoners – from the adjoining parish – had the right to feed their animals at Lammas (Firth and Firth 2022, fig. 31).

Of the ings identified, 43 are associated with settlements that had meadows recorded in Domesday. However, 51 ings and meadows were related to settlements referred to in the Domesday survey but not recorded as having meadow. The remaining 12 ings are instances where the settlement itself is not recorded in Domesday. Overall, this suggests that references to meadows in the Domesday survey does not offer a comprehensive picture for the study area, either due to lack of recording at the time, or because there was a significant expansion of meadows and ings subsequent to the Domesday survey.

A small number of ings named in the tithes or recorded on the OS 25" Epoch 1 maps, were found outside of the floodplain. Some were fed by small drains, while for others it was not clear how they were flooded despite the ing reference, perhaps indicating significant change since the medieval period. For example, FPM 2045 Elwick's Ings at Kirby Hall is a little distant from the Ouseburn and

in quite an elevated location. However, it is adjacent to Elwick Carr Plantation at the head of Score Ray Beck; the carr name and evident canalisation of the drainage suggests a formerly wetter landscape that may have been suitable for a meadow.

The confidence level for the identification of an area as either ings or floodplain meadow was predominately 3 (44 ings or floodplain meadows) or 4 (22 ings or floodplain meadows). These are ings or floodplain meadows that were either named on maps or in the tithe and a moderate to high level of certainty about their location.

Thirty three ings were singular plots that may have been named as an ing but had no characteristic features: these are typically meadows that had been fully enclosed by the time of the 19th century maps used in this study. They were recorded as having a confidence level of 2.

Only six ings were identified as having all the characteristic features of FPMs identified in other studies: these were recorded as having the highest confidence of level 5, where not only is the location certain but also the form and extents. These features - namely droves, funnel shaped entrances, back drains and doles first identified as being characteristic of floodplain meadows along the Dorset Stour have become the basis for identification in subsequent studies of selected stretches of the Severn and Thames catchments, as well as being evident in other catchments such as the Culm and the Eden. So far, the form of the floodplain meadow persists in varying degrees in the historic records in each catchment examined. It was notable that fewer floodplain meadows still retained all or any of these characteristic features in this study of the Rivers Swale, Ure and Ouse. This appears to reflect the management and manipulation of these catchments during the enclosures of the 16th to 19th centuries, contrasting with catchments where floodplain meadows were still in use and recognisable in the early 19th century.

Alverton and North Allerton Ings, located on Cod Beck, present an example where these characteristic features have survived to be mapped. A floodplain meadow comprising of three adjoining ings was recorded by Hammond from an Enclosure Award Map that would have pre-dated the tithe. These three ings were recorded as Thornton-le-Beans Ings, North Allerton Ings and Millar Ings and appear again on the 1847 *Plan of the Titheable Lands in the district of Alverton or North Allerton Ings* (Figure 2).

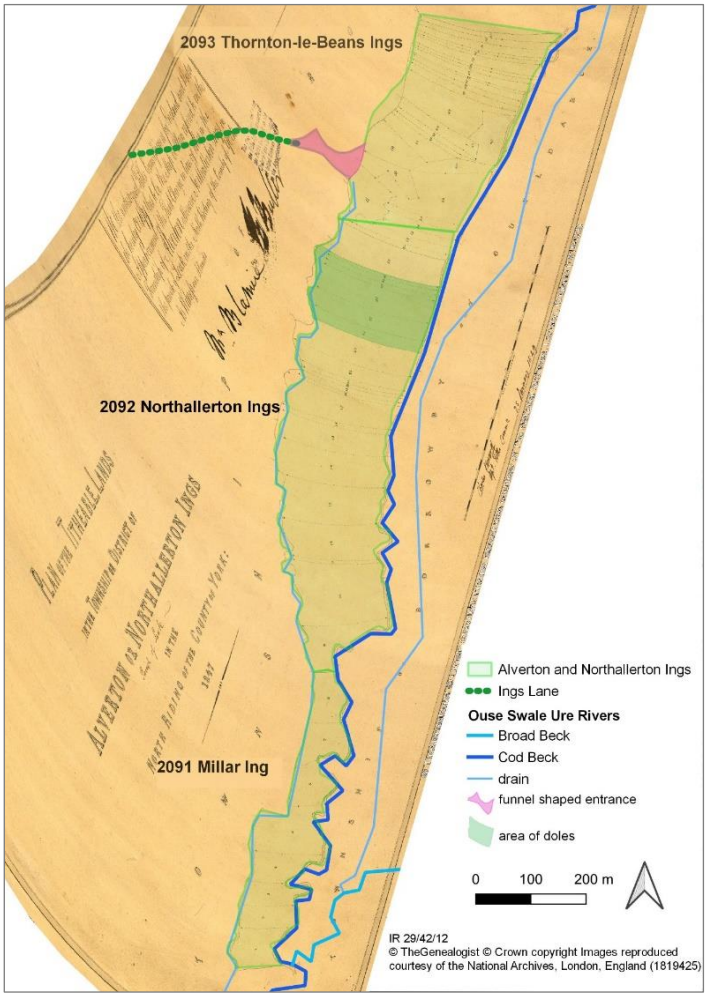

Figure 2 Alverton and Northallerton Ings showing the typical form of the floodplain meadow identified in the catchment of other rivers. Illustrates the drove (Ings Lane), a funnel shaped entrance and the floodplain meadow covered in multiple doles.

The 1847 plan for these ings illustrates a drove named Ings Lane adjoining a funnel shaped entrance into the ings, which is divided into doles. There is a back drain, mapped on both the OS 25" Epoch 1 map and the plan. This floodplain meadow is identical in form to many of the floodplain meadows found on the Dorset Stour, the Severn and the Thames and confirms that these floodplain meadows, referred to as ings, existed in Yorkshire as they did in other counties.

Tithe plots bearing the name ings were found in most of the parishes where tithes were available; and Hammond's documentary work shows that the meadows often predate the tithe evidence. This suggests that floodplain meadows were probably widespread along the Rivers Ouse, Swale and Ure, but that by the time of these tithes, their form had been removed from the landscape by the 18th and 19th century (and potentially earlier) field systems, such that the plots recorded as ings were simply featureless, rectangular fields no longer exhibiting any resemblance to the forms of floodplain meadows found in other studies. Having lost their form by the early 19th century, it seems likely that the traditional management of these floodplain meadows had also been lost by this time, leaving only ing names as a marker of their earlier importance.

As noted above, in some cases the plots named ings are not even situated near the river despite their being likely to the remains of floodplain meadows. Aside from stretches where the floodplain is naturally constricted, the historic floodplain was probably larger than it is today (as indicated by risk of flooding) as historic demand for arable land led to the construction of flood defences to reclaim and protect it. The result was the loss of floodplain meadows and the floodplain itself, leaving ing names in the tithe apportionment as the only trace of their existence.

Figure 3 illustrates single plots recorded as ings in the tithe apportionment for Skipton-on-Swale (FPM 2074) and the adjoining parish of Catton (FPM 2072). The extent of the ings could not be mapped for either parish as there was not enough information to confidently recognise their boundaries from the maps or apportionments. In cases such as these, only the named plot was digitised, and the plots were given a low confidence level. It is known there were ings here, but there is no way of knowing their extents from either the OS 25" Epoch 1 map or tithe. In contrast, across the river in Baldersby (FPM 2101) the former extents of the ings can be picked out with confidence.

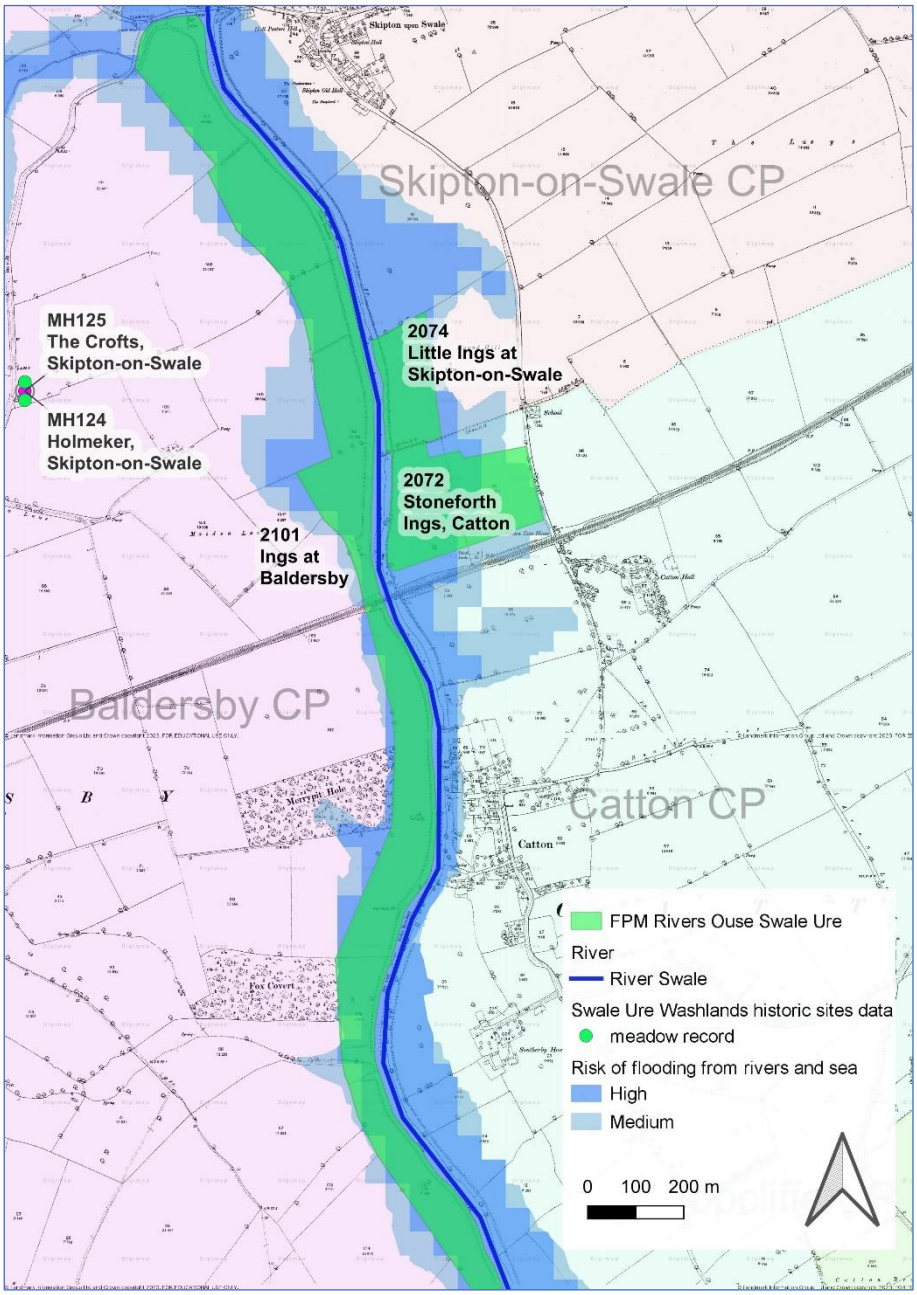

Figure 3 Example of where modern field boundaries have obscured the extents of the original ings at Catton (FPM 2074 Little Ings at Skipton on Swale) and Skipton-on-Swale (FPM 2072 Stoneforth Ings, Catton) in contrast to the sinuous extent of Ings at Baldersby (FPM 2101) on the other side of the river.

Some ings were situated either on tributaries that had been canalised or tributaries that serviced drains, away from the main river floodplains. At Bishop Monkton (Figure 4) multiple small rectangular plots are recorded on the tithe map as Ings Allotment. The ings are bisected by Ings Drain which runs through the centre of the ings. This underlines the degree to which drainage and canalisation have significantly altered the landscape from earlier practices and associated forms.

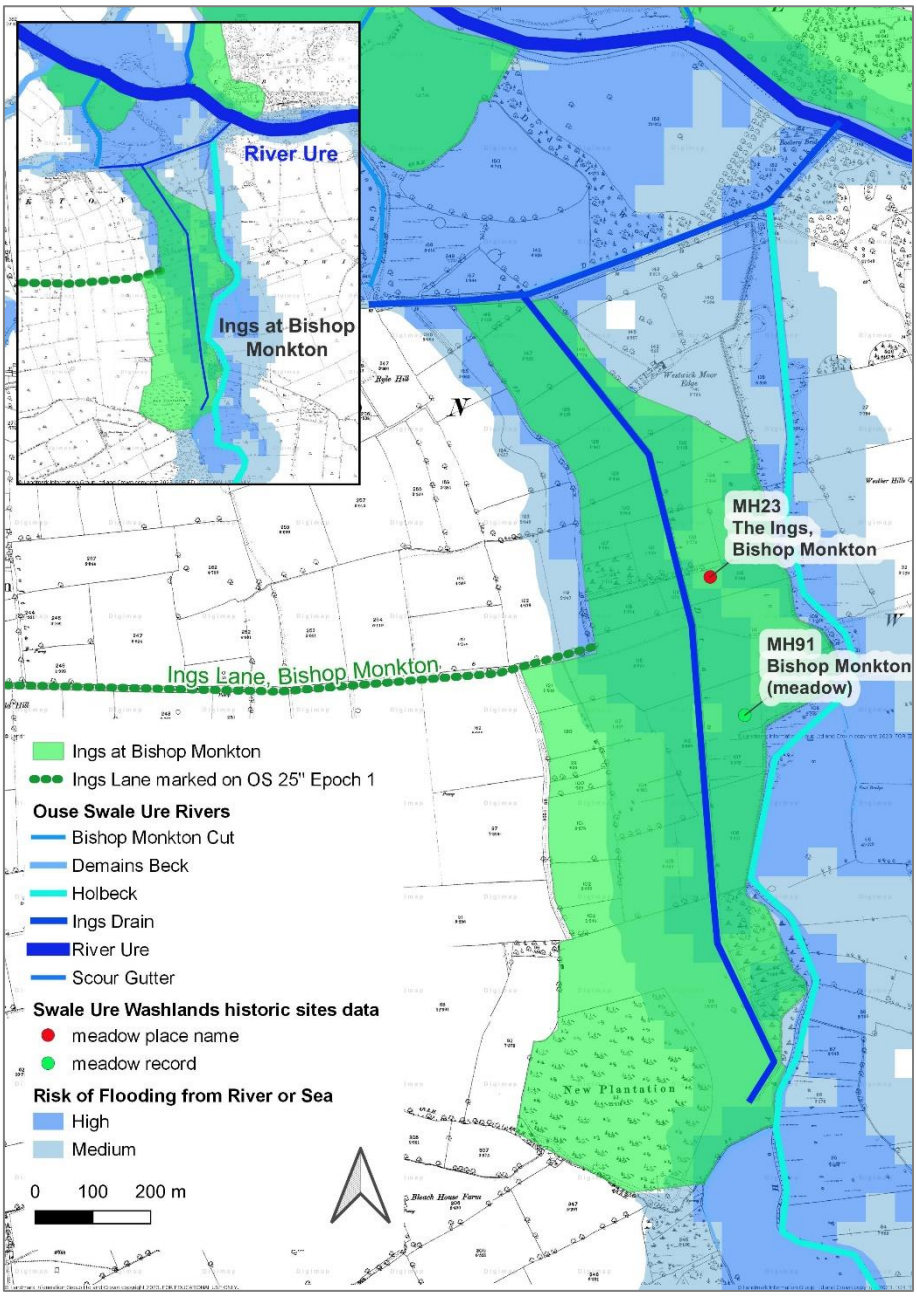

Figure 4 Ings at Bishop Monkton (2030), showing Ings Drain running centrally through the floodplain meadow.

Ings recorded in the tithe apportionments rarely had their cultivation type recorded as meadow, instead using the term ‘grass’. However, this cultivation type was not exclusively associated to areas of the floodplain or with the term ings, making it an unreliable term to use as a marker for a floodplain meadow. Indeed ‘grass’ appears to be used interchangeably with pasture, with plots having cultivation type recorded as ‘grass’ appearing both within and outside of the floodplain. This is another contrast with the results of studies in other catchments, where ‘meadow’ has been used distinctly from ‘pasture’, and where ‘meadow’ as a cultivation type has been a reliable indicator of floodplain meadows. The use of grass as a category rather than meadow/pasture in tithe apportionments may be a regional preference, and added to the difficulty of identifying floodplain meadows in these catchments.

The ings mapped and recorded in this study were usually located close to ings identified by Hammond from the documentary sources. At Ripon, five ings were listed by Hammond and five plots named as ings were mapped by this project (Figure 5). Of these, FPM 2102 Piper Ing and FPM 2103 Swilmire Ings are likely to relate to the ings found in a 1744 enclosure inventory

(MH109; MH20); their relationship to the floodplain today is not self-evident perhaps due to suburban development, but the evidence from the tithe is compelling. It is possible that FPM 2026 was formerly Halsey Ings, found in a 1650 audit of Canons of Ripon (MH83). This Ing was recorded historically as being near the site of Ailey Hill and the boundary for Buckly Ings is to the north east of this site. Of the Ripon Ings identified from tithe apportionments (FPM 2104; FPM 2105), it was not possible to say whether either could be associated with Ley Ings, Ripon Ings or Halsey Ings. As with other examples found in this study, FPM 2103, 2102 and 2026 were not located within the current floodplain.

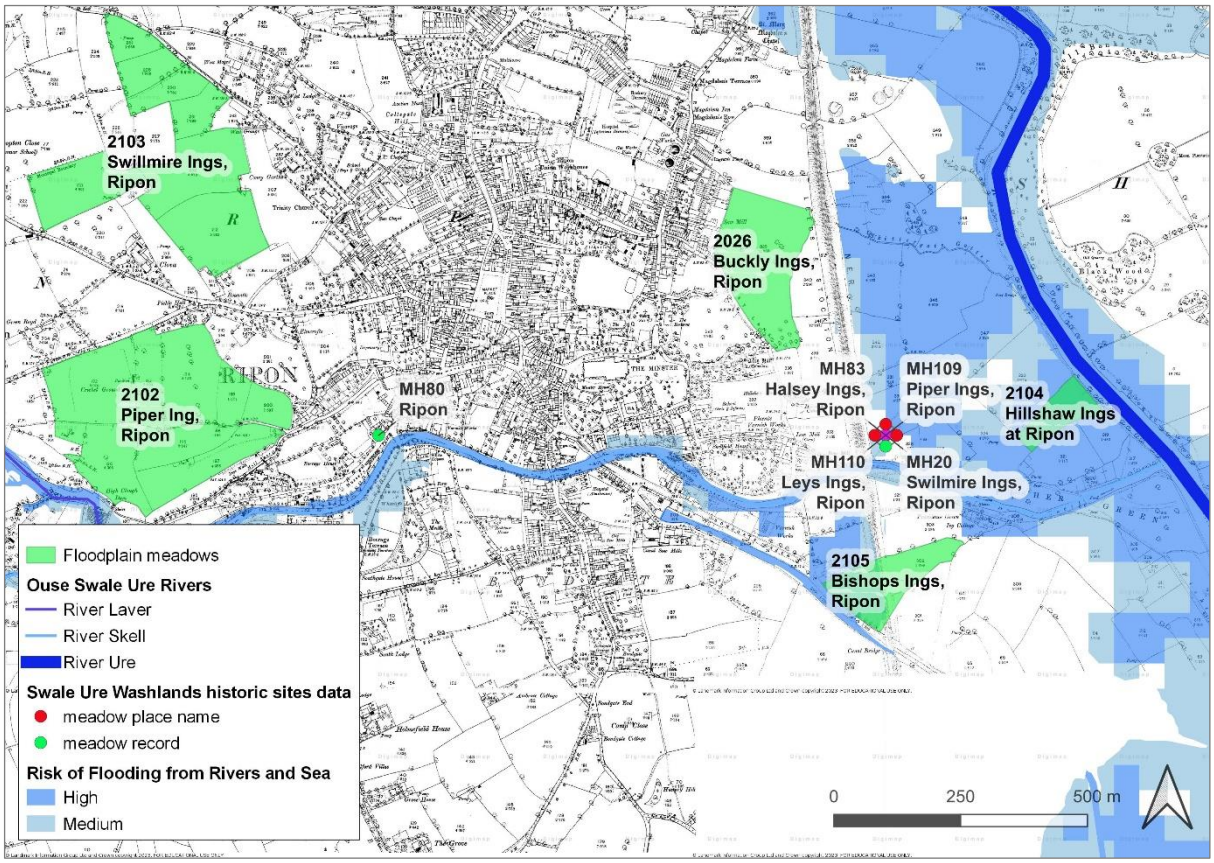

Figure 5 Ings of Ripon, showing Hammond's ings identified from historic documentary sources.

Conclusion

The study has shown that Hammond's documentary research can be combined with the FPM methodology to locate historic floodplain meadows with a clear degree of confidence. The documentary sources provide additional context and dating, enabling ings whose location and extent is derived from 19th century maps to be extended many centuries earlier, even to the 12th century in some cases. The association of FPMs with these documentary sources reinforces the conclusion that features in the landscape mappable from 19th century sources and still extant in some cases are the relics of a land use system centred on floodplain meadows stretching back into the medieval period, even though their distinctive habitats have been erased. This lends confidence to opportunity mapping for restoration sites using historic map evidence indicating the likely former presence of floodplain meadows. Furthermore, the documented antiquity of identifiable floodplain meadows adds to the possibilities for engaging the public and volunteers in restoring this habitat to its former locations whilst learning about the history of meadows from maps and archival sources.

The approach adopted here could be applied to more places for which documentary records exist for ings and floodplain meadows, including other part of the Ouse and its tributaries researched by Hammond. A further development would be to start mapping the earliest documented dates for each FPM to see if there is any chronological and spatial patterning evident from the GIS.

This investigation has also added a further regional case study to the developing understanding of the presence and survival of floodplain meadows across England. In this case – in contrast to studies in Dorset, Devon, Gloucestershire, and Oxfordshire – it seems that the form of many floodplain meadows had already been lost before the widespread availability of historic maps in the early 19th century. In many instances here it appears that the floodplain had been enclosed and improved, sometimes behind floodbanks, leaving ings only as names of rectangular fields that give little clue as to the earlier extent of floodplain meadows. Yet the presence of at least some floodplain meadows here with all the characteristic features seen in other catchments suggest that at some point in the past, floodplain meadows in these distinctive forms were more widespread on the Ouse and its tributaries. This continues to suggest that floodplain meadows with consistent characteristics were widely distributed across England in the medieval period. The pattern of their survival by the nineteenth century seems to indicate regional differences in histories of enclosure and improvement rather than in the original presence and form of floodplain meadows.

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